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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,770	12/27/2001	Michael A. Tedesco	4241-4002	5744
27123	7590	10/18/2005	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			LE, DEBBIE M	
			ART UNIT	PAPER NUMBER
			2168	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/032,770

Applicant(s)

TEDESCO, MICHAEL A.

Examiner

DEBBIE M. LE

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24, 26-50, 52-75 and 77-167 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24, 26-50, 52-75 and 77-167 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

Applicant's arguments filed on 7/15/05. Claims 25, 51 and 76 have been canceled. Claims 1-24, 26-50, 52-75, 77-167 are pending for examinations.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13, 15-40, 42-66, 68-75, 77-83, 90-109, 111-127, 129-167 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-omari et al (USP 6,438,741 B1) in view of Lu et al (Dynamic and Load-balanced of Task-Oriented Database Query Processing in Parallel Systems).

As per claims 1, Al-omari discloses a method for processing a database command, performed by an alternate database engine, the method comprising:

**'receiving, from a user, a database command'** as input SQL query (fig. 2, # 148, col. 10, line 65) **'requiring data from a first database engine, the first database engine having a command layer for processing database commands'** as the database server 102 can be a SQL database engine that manages the control and execution of SQL commands (see col. 8, lines 4-6).

Al-omari teaches the system 100 is a distributed computer system (see col. 7, lines 65-67). Al-omari does not explicitly teach separately processing the database command using a command layer of an alternate database engine without accessing the command layer of the first database engine. However, Lu teaches '**separately processing the database command using a command layer of an alternate database engine without accessing the command layer of the first database engine**' (see page 358, last paragraph). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement an alternate database engine to process the database commands as disclosed by Lu because it would allow Al-omari's system allocate a task (i.e., query) to be processed by other processor (i.e., an idle processor) in order to avoid failure of a query processed because such one processor is in a critical overloaded (i.e., not enough memory or capacity to process the query).

As per claim 2, Al-omari teaches **wherein the first database engine stores the data in a first database file**, as user access to data in stored databases (fig. 2, # 112, col. 7, lines 64-65).

As per claim 3, Lu teaches **wherein the alternate database engine stores second data in a second database file** (page 361).

As per claim 4, Al-omari teaches **wherein the database command is compatible with at least one of: a Structured Query Language format, a Javascript Database Connectivity (JDBC) protocol and an Open-Database Connectivity protocol**, as SQL (col. 10, line 67).

As per claim 5, Al-omari teaches **wherein the database command is a query**, as input query (fig. 2, # 148, col. 8, line 66)

As per claim 6, Al-omari teaches **said processing the database command further comprising: evaluating the query**, as the input query 148 is processed by a query processor 152 that includes a parser, converts the query into an internal representation referred to as a query tree (col. 11, lines 1-4).

As per claim 7, Al-omari teaches **said evaluating further comprising: evaluating the query against system usage prior to submission to the alternate database engine**, as top-down rule based system by identifying the complexity of a query prior to applying a rule to an expression, the cost, the resource usage associated with a query operator (abstract, lines 2-3, col. 4, lines 52-55).

As per claim 8, Al-omari teaches said evaluating further comprising: evaluating the query based on **at least one of: a parameter of the query**, a number of relational databases to be accessed for the query, a size of a data field to be searched for the query, an availability of resources of a system maintaining the alternate database engine, an availability of resources of a system maintaining the first database engine, a number of relational database tables to be employed for the query, a limitation imposed on a size of a query result set, a number of columns of data to be returned in a query result set, a cost of a similar stored query and a number of function calls for the query, as group attributes, parameters (col. 15, lines 48-49, col. 16, lines 17, 35-59, col. 29, lines 9-27).

As per claim 9, Al-omari teaches **submitting the query to the alternate database engine with a limit on a number of returns responsive to the query, based on said evaluating**, as generate one or more alternate execution plans, the query execution engine executes the input query (col. 11, lines 10-15).

As per claim 10, Al-omari teaches **editing the query, based on said evaluating**, as binding, and/or substitute (fig. 13b, col. 5, line 18).

As per claim 11, Al-omari teaches **rejecting the query, based on said evaluating**, as if the cost exceeds the content's cost limit, a plan is not generated for the expression and the task terminates (col. 33, lines 2-3).

As per claim 12, Lu teaches **wherein said evaluating comprising: determining, prior to said processing, whether the database command requires accessing the first database engine, and if not, accessing data stored only by the alternate database engine** (see page 360).

As per claims 13, 15-17, Lu teaches translating the query to a native format of the alternate database engine, generating a result of the query, transmitting the result to the one of the plurality of users submitting the database command, transmitting the result in a format of the first database engine (page 359).

As per claim 18, Lu teaches storing second data in a database file maintained by the alternate database engine (page 361).

As per claim 19, Lu teaches determining whether the database command requires at least a portion of said second data, and if so, identifying said portion responsive to the database command (see page 360).

As per claims 20-23, Lu teaches receiving new data to be provided responsive to database commands and storing said new data in a database file maintained by the alternate database engine, receiving new data to be provided responsive to database commands and storing said new data in a database file maintained by the first database engine, teaches identifying data stored by the first database engine that is responsive to the database command; and accessing said identified data, wherein said identifying and accessing are performed exclusively through the command layer of the alternate database engine, without interaction with the command layer of the first database engine (page 362).

As per claim 24, Lu teaches wherein the alternate database engine executes only read-only databases commands (page 361).

As per claims 29, 55, Al-omari teaches wherein the computer system is at least one of: a local area network, a wide area network, an intranet, an extranet, a wireless network and the Internet (col. 7, lines 65-67).

Claims 77-78 are rejected by the same rationale as state in independent claim 1 arguments. Furthermore, Al-omari discloses **a plurality of users on a computer system**, as many user workstation computers or terminals in a distributed computer environment (col. 8, lines 1-2).

Claims 30-40, 42-50, 56-66, 68-75, 85-89, 91-109, 111-127, 129-137, 139-151, 153-167 have similar limitations as claims 2-13, 15-24, 29, 55; therefore, they are rejected by the same subject matters.

Claims 26, 27, 28, 52, 53, 54, 79-80, 90, 138, 152 are rejected by the same rationale as state in independent claim 1 arguments.

Claims 81-83 are rejected by the same rationale as state in independent claim 1 arguments. Furthermore, Lu teaches **receiving a read-only, read-write database command** (page 361).

Claims 14, 41, 67, 84, 110 and 128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-omari et al (USP 6,438,741 B1) in view of Lu et al (Dynamic and Load-balanced of Task-Oriented Database Query Processing in Parallel Systems) further in view of Driesch Jr. et al. (USP Application No. 2003/0065648 A1).

As per claim 14, Al-omari and Lu do not explicitly teach determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine. However, Driesch teaches **determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine**, as the log 134 may later be accessed to retrieve query implementation information for purpose of (¶ 0028). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine because a log file will allow for easy access to the data to perform any analysis for purpose of, for example, determining system efficiency.



Claims 41, 67, 110, and 128 have similar limitations as claim 4, therefore, they are rejected under the same rationale.

As per claim 84, Al-omari teaches **receiving, from a user, a database command, as input query (fig. 2, # 148, col. 10, line 65); said processing further comprising: evaluating the database command to determine system usage of the query at the database engine, prior to execution of the database command, as top-down rule based system by identifying the complexity of a query prior to applying a rule to an expression, the cost, the resource usage associated with a query operator (abstract, lines 2-3, col. 4, lines 52-55) said evaluating based on at least one of: a parameter of the, a number of relational databases for the database command, a size of a data field to be searched for the database command, an availability of resources of the database engine, a number of relational database tables to be employed for the database command, a limitation imposed on a size of a query result set, a number of columns of data to be returned in a query result set, a cost of a similar stored database command and a number of function calls for the database command; as group attributes, parameters (col. 15, lines 48-49, col. 16, lines 17, 35-59, col. 29, lines 9-27) determining a threshold value for system usage of the alternate database engine, as if the complexity of the query is above a threshold (abstract, lines 4-5) wherein the threshold value is based on at least one of: estimated processor usage, estimated memory usage, input/output resource usage and disk resource usage of the alternate database engine, as the cost**

components measure the resource usage associated with a query operator (col. 4, lines 52-55); **if the system usage surpasses a threshold value, performing at least one of the following: submitting the database command to the alternate database engine with a limit on a number of returns responsive to the database command,** the plan is created if the input plans does not exceed the expression's cost limit (col. 33, lines 12-13) **editing the database command,** as binding, and/or substitute (fig. 13b, col. 5, line 18) **and rejecting the database command,** as if the cost exceeds the content's cost limit, a plan is not generated for the expression and the task terminates (col. 33, lines 2-3).

Al-omari does not explicitly teach separately processing the database command using a command layer of an alternate database engine without accessing the command layer of the first database engine, determining whether the database command requires accessing data maintained by the first database engine, and if not, accessing second data stored only by the alternate database engine, translating the database command to a native format of the alternate database engine, generating a result of the database command and transmitting the result to the user in a format of the first database engine. However, **Lu** teaches separately processing the database command using a command layer of an alternate database engine without accessing the command layer of the first database, determining whether the database command requires accessing data maintained by the first database engine, and if not, accessing second data stored only by the alternate database engine, translating the database command to a native format of the alternate database engine, generating a result of the

database command and transmitting the result to the user in a format of the first database engine (page 358, last parg. Pages 360-361).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement an alternate database engine to process the database commands as disclosed by Lu because it would allow Al-omari's system allocate a task (i.e., query) to be processed by other processor (i.e., an idle processor) in order to avoid failure of a query processed because such one processor is in a critical overloaded (i.e., not enough memory or capacity to process the query).

Al-omari and Lu do not explicitly teach determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine. However, **Driesch teaches 'determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine'**, as the log 134 may later be accessed to retrieve query implementation information for purpose of (¶ 0028). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of determining whether the query requires accessing temporally sensitive data, and if so, accessing a transaction log of the first database engine because a log file will allow for easy access to the data to perform any analysis for purpose of, for example, determining system efficiency.

### ***Response to Arguments***

Applicant's arguments, see page 35, filed on 7/15/05, with respect to the rejection(s) of claim(s) 1-24, 26-50, 52-75, 77-167 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made under U.S.C. 103(a) as being unpatentable over Al-omari et al (USP 6,438,741 B1) in view of Lu et al (Dynamic and Load-balanced of Task-Oriented Database Query Processing in Parallel Systems) and further in view of Driesch Jr. et al. (USP Application No. 2003/0065648 A1).

### ***Conclusion***

The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M. LE whose telephone number is (571) 272-4111. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JEFFREY GAFFIN can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'DEBBIE M LE', with a long horizontal line extending from the end of the signature.

DEBBIE M LE  
Examiner  
Art Unit 2168

Debbie Le

Oct. 14, 2005.